XXVII.—*Notices of British Fungi.* By the Rev. M. J. Berkeley, M.A., F.L.S., and C. E. Broome, Esq.

[Continued from p. 189. vol. vii. Ser. 2.]

[With four Plates.]

615. *Sphæria* (Circinatæ) *hapalocystis,* n. s. Sparsa tecta; peritheciis subglobosis tenuibus subtiliter tomentosis, collo obliquo deorsum constricto una cum ostiolo breviter fusiformi; sporidiis oblongo-ellipticis utrinque appendiculatis biseptatis. On dead twigs of plane, Batheaston.

This species, which is just intermediate between *Obtectæ* and *Circinatæ,* is closely allied to *S. aucta,* but differs in the nature of the spores, which are broader in proportion, especially when old, and are essentially biseptate, whereas in *S. aucta* they are uniseptate or triseptate from the division of the two original endochromes. In both there is the same peculiar truncate hyaline appendage. The perithecia are peculiarly delicate. There is some resemblance also to *S. vestita,* but the perithecia are more decidedly tomentose in that species.

Plate X. fig. 12. *a.* Cluster of perithecia from which the cuticle has been removed; *b.* single perithecium; *c.* portion of its delicate wall; *d.* ascus; *e.* sporidia; *f.* do. germinating. All more or less magnified.

616. *S.* (Seriatæ) *lineolata,* Roberge; Desm.! Pl. Crypt. no. 1263. "Amphigena erumpens; stromate brunneo. Peritheciis minutissimis astomis nigris albo-farctis subconnatis in seriem simplicem dispositis. Ascis clavatis; sporidiis oblongis; sporulis 3–5 globosis." On *Ammophila arundinacea.* Sands of Barrie, Mr. W. Gardiner, with *S. sabuletorum.*

617. *S.* (Byssisedæ) *Dickiei,* n. s. Peritheciis aggregatis erumpentibus subglobosis ostiolo obtuso papillæformi setis rigidis longiusculis obsitis; filamentis thallinis intertextis. *Lasiobotrys Linnææ,* Dickie, MSS. On leaves of *Linnæa borealis,* Aberdeen, Dr. Dickie, 1845; Glen Dole, Clova, Rev. W. A. Leighton, Aug. 1837; Inglesmaldie, Kincardineshire, G. Lawson, Esq., 1848.

Forming orbicular sori beneath the true cuticle about a line broad. Perithecia at length exposed, subglobose, with an obtuse papillæform ostiolum beset with stiff dark bristles as long or longer than themselves, springing from a radiating more or less interwoven stratum of very obscurely septate brownish threads, amongst which are a few darker and closely articulate. Asci short, subcylindrical, obtuse; sporidia oblong, short, containing about four nuclei or four regular endochromes, or more properly uniseptate with two endochromes in each division.

This has precisely the habit of *Lasiobotrys,* and occurring on

a plant of the same natural order, at first sight seems to claim a place in that genus, but it has not the very peculiar structure to which we shall advert towards the end of our memoir. Should the large Sclerotioid bodies in that genus hereafter prove to be ascigerous, it will then be time to consider the propriety of associating the two species.

PLATE X. fig. 8*. *a.* Perithecium; *b.* subiculum; *c.* asci; *d.* sporidia. All more or less magnified.

618. *S.* (Byssisedæ) *Desmazierii*, n. s. Subiculo latissime effuso tomentoso; peritheciis magnis insidentibus globosis hic illic confluentibus scabriusculis ostiolo papillæformi; ascis elongatis; sporidiis elongato-cymbiformibus 6–7 nucleatis fuscis. On the ground in woods. First found, in company with M. Desmazières, in the beginning of August, and still very abundant, at the end of October 1851, Collyweston, Norths.

Spreading widely over the ground, fallen leaves, &c., and covering them with a mouse-coloured tomentose subiculum, which consists of somewhat branched anastomosing threads, the tips of which give off opposite, often subdivided branchlets, which form little racemes, surmounted by oblong conidia. Perithecia large, half immersed in the subiculum, which in age acquires a darker hue, somewhat scabrous, dull pitchy black, or plumbaginous, globose, with a central papillæform ostiolum, which is frequently seated in a little irregular areola. Asci elongated, clavate, inner membrane furnished with an oblong process at the tip; sporidia large, cymbiform, elongated, subacuminate, at first hyaline, with two or three variously-sized globules, at length dark brown, containing six to seven globose nuclei.

This magnificent species resembles closely *Sphæria aquila*, Fr., but the colour of the subiculum is different, as is also the habitat, but above all, the sporidia, which instead of being subelliptic and short as in that species and *S. fusca*, are much elongated and very peculiar in form.

We have dedicated this magnificent species to M. Desmazières, as one of the results of his short visit to England during the past summer. The species to which this name was given without any characters is now rejected both by Fries and M. Desmazières as imperfectly known. A notice of it will be found in the Gardeners' Chronicle for 1851.

PLATE IX. fig. 1. *a.* Subiculum; *b.* ascus; *c.* sporidia in various stages of growth. All more or less magnified.

**S. tristis*, Tode, vol. ii. p. 9. t. 9. f. 67. We have just received the true species from the Rev. A. Bloxam, which is characterized by the collapsing perithecia and minute oblong curved

biseptate or trinucleate sporidia, whereas the sporidia of *S. phæostroma*, Mont., are exactly as described in the 'English Flora' under *S. tristis* β.

619. *S.* (Villosæ) *macrotricha*, n. s. Subiculo repente; perithecis ovatis deorsum pilis longis vestitis, sursum attenuatis denudatis, cum ostiolo papillæformi collabentibus; ascis clavatis; sporidiis fusiformibus uniseptatis, 6-nucleatis. On dead leaves of *Carex paniculata*, Batheaston, Feb. 1851. On beech mast, King's Cliffe, Oct. 1851.

Brown or nearly black; subiculum effused, consisting of interwoven creeping hairs; perithecia crowded, ovate, clothed with long hairs, attenuated and more or less denuded above, and when dry collapsing with their papillæform ostiolum. Asci clavate. Sporidia biseriate, fusiform, consisting of two apposed cones constricted at the juncture and sometimes above the first nucleus, each division containing one or more globules.

This species appears to us very distinct from all described by authors. It seems to come nearest to *S. crinita*, Fr., but his published specimens are *Chætomium elatum*, Kze.

The Cliffe specimens are darker, and the hairs are shorter, but the form of the perithecia, their papillæform collapsing, comparatively naked apex, and above all the sporidia, are identical.

PLATE IX. fig. 2. *a*. Perithecium; *b*. ostiolum; *c*. thread of mycelium; *d*. fragment of perithecium with flocci; *e*. ascus; *f*. sporidia. All more or less magnified.

620. *S.* (Villosæ) *chætomium*, Corda! Ic. Fasc. 2. t. 13. fig. 102. *Chætomium pusillum*, Fries! Sc. Suec. no. 272. *S. exosporioides*, Desm.! Pl. Crypt. no. 126. On dead leaves of *Carex pendula*, Batheaston, with *S. Eres*.

There is no essential difference between the plant of Fries and Desmazières. Corda's figure represents the hairs as broad as the base and incurved, but we find them exactly as in *S. exosporioides*, Desm. The asci and sporidia agree in all the specimens, except perhaps that in the specimens of Fries the asci are slightly more slender and the endochromes less marked, differences which occur in many species under varying circumstances of age, &c.

We subjoin the characters of *S. exosporioides* as given in the 'Plantes Cryptogames de France':—

"Hypo- rarius epiphylla. Perithecis minutissimis superficialibus sparsis vel gregariis humectatis subglobosis; siccis pezizoideo-collapsis atris; pilis concoloribus rigido-divergentibus obsitis; ostiolis papillatis exilissimis; ascis subfusiformibus; sporidiis oblongis, rectis vel subcurvatis; sporulis 4 opacis."

PLATE IX. fig. 3. *a*. Perithecium; *b*. flocci; *c*. asci; *d*. sporidia. All more or less magnified.

621. *S.* (Villosæ) *Eres,* n. s. Sparsa superficialis; peritheciis globosis pilis longis rigidis articulatis vestitis; ascis brevibus clavatis; sporidiis oblongis uniseptatis. On dead leaves of *Carex paniculata,* Spye Park, Feb. 1850; on *Carex pendula,* Batheaston, Jan. 1850.

Scattered over the leaves and quite superficial, attached by a few hyaline creeping threads. Perithecia globose, beset with very long radiating, rigid, somewhat pellucid articulated bristles, which are black to the naked eye, but purplish brown under the microscope; when young their apices are often swollen. Asci rather short, clavate; sporidia biseriate, oblong-elliptic, about four times as long as broad.

This very beautiful species occurs on the same leaves as the foregoing, and is distinguished by its much larger perithecia, longer pellucid not opake hairs, clavate not fusiform asci, and shorter uniseptate sporidia. The present under a lens looks very like *Vermicularia trichella*; whereas the hairs of the former are scarcely visible.

PLATE IX. fig. 4. *a.* Perithecium; *b.* one of the flocci; *c.* ascus with paraphyses; *d.* sporidia. All more or less magnified.

622. *S.* (Denudatæ) *arenula,* n. s. Sparsa ochroleuca peritheciis ovatis brevissime pedicellatis ostiolo papillæformi; ascis clavatis; sporidiis oblongis subfusiformibus uniseptatis. On dead leaves of *Aira cæspitosa,* Batheaston, Feb. 1851.

Thinly scattered over the leaves. Perithecia ovate, with an obtuse papillæform ostiolum, contracted at the base, rarely obovate and perfectly blunt. Asci subclavate; sporidia biseriate, oblong, slightly attenuated, rarely subelliptic uniseptate.

Allied to *S. coccinea,* and at first calling to mind our genus *Oomyces,* but agreeing really in structure with the above-mentioned species.

PLATE IX. fig. 5. Asci and sporidia magnified.

**S. pulvis pyrius,* P. A very curious state of this species has been found at Rudloe in Nottinghamshire on broom, and specimens gathered by Capt. Carmichael in a similar condition are in Sir W. J. Hooker's herbarium. The perithecia are sometimes positively produced beneath the cuticle, but on the same twig others occur on the naked portions of the bark and run over the stroma of some *Sphæria,* probably *S. fusca,* so as to give it a very curious appearance, and to have led Dr. Klotzsch to consider the production as *S. conglobata,* Fr. The subcuticular specimens have the habit of *S. verrucaria,* which very frequently accompanies *S. conglobata.* A specimen of the latter sent to us by Fries has given us the opportunity of examining *S. verrucaria,* which we

find truly distinct from *S. epidermidis* in its very short flask-like asci and linear-oblong uniseptate sporidia, which however are scarcely mature, and may therefore be further divided at a later stage of growth.

623. *S.* (Obtectæ) *melanotes*, n. s. Maculis elongatis nigerrimis; peritheciis tectis, ostiolis minutis; ascis linearibus; sporidiis ellipticis fuscis. On oak palings, Batheaston, Dec. 1851.

Forming oblong, somewhat irregular black patches about an inch long, sprinkled with the punctiform ostiola. Perithecia immersed, scarcely visible except from their ostiola. Asci linear; sporidia elliptic, brown, $\frac{1}{2000}$th of an inch long.

This species has somewhat the habit of *S. livida*, but has smaller perithecia and different fruit. The black spots are scarcely at all raised. I find nothing like it in Fries. The perithecia do not raise the surface of the wood into little waves as in *Sphæria anserina*, which is described by Persoon as having the sporidia pointed at either end. *S. anserina* of the 'English Flora' is a *Sphæropsis*.

Plate IX. fig. 6. *a*. Asci magnified; *b*. sporidia on the same scale as those in fig. 7.

624. *S.* (Obtectæ) *hypotephra*, n. s. Maculis effusis cinereis; peritheciis tectis subglobosis; ostiolis obtusiusculis emergentibus; ascis linearibus; sporidiis elongatis curvulis demum 3-septatis. On oak rails, King's Cliffe, Nov. 1851.

Forming large cinereous spots. Perithecia covered, globose; ostiola rather obtuse, protruding. Asci linear; sporidia uniseriate, oblong, slightly curved, rather narrow, about $\frac{1}{1000}$th of an inch long; at length 3-septate, often binucleate. Allied to the last, but at once distinguished by the pale spots and differently shaped larger sporidia.

This somewhat resembles Persoon's *S. anserina*, but the sporidia are of a different form.

Plate IX. fig. 7. *a*. Ascus with sporidia; *b*. sporidia.

625. *S.* (Obtectæ) *siparia*, n. s. Tecta sparsa; peritheciis magnis depressis lanatis; ostiolo obtuso brevissimo; ascis clavatis amplis; sporis oblongo-cymbiformibus cellulosis muco involutis. On birch with *Prosthemium betulinum* and *Hendersonia polycystis*, Spye Park, Feb. 1850.

Scattered, covered by the cuticle. Perithecia large, depressed, furnished with a very short central ostiolum, clothed with more or less dense ferruginous wool. Asci large, clavate; sporidia biseriate, oblongo-subcymbiform, cellular, clothed with a mucous coat.

This magnificent species, which is allied to *S. lanata*, in which

the sporidia are minute and curved, is remarkable for the beauty of its fruit, which resembles in colour and structure that of *S. herbarum.*

PLATE IX. fig. 8. *a.* Asci; *b.* sporidia highly magnified in various stages of development.

626. *S.* (Subtectæ) *Argus,* n. s. Tecta; peritheciis magnis depressis collapsis opacis; ascis amplis clavatis; sporidiis octonis biseriatis oblongis curvulis ocellatis serius 5–6 septatis, muco involutis. On dry birch twigs, Spye Park, with *Hendersonia polycystis* and *Sph. lanciformis.*

Entirely concealed by the cuticle, scattered. Perithecia depressed, collapsed, dull, as if very minutely pulverulent; ostiolum minute. Asci clavate, large. Sporidia biseriate, oblong, slightly curved when seen laterally, at first consisting of two joints; these soon acquire seven endochromes, of which four belong to the larger division, in which state they resemble *Sirosiphon ocellatum*; at a later period they become much darker, and true septa are formed varying in number from five to six. Till they acquire this dark tint, they have a thick pellucid gelatinous coat.

Few microscopic objects can be more beautiful than the fruit of this and its two associates. In *S. lanciformis* the endochromes are connected by a little process exactly as in *Sirosiphon*; in the present species the resemblance is more superficial, but sufficiently strong to suggest the specific name. *S. amblyospora* is at once distinguished by the peculiar form of its sporidia.

PLATE IX. fig. 9. *a.* Perithecium; *b.* sporidia more or less magnified.

627. *S.* (Obtectæ) *amblyospora,* n. s. Sparsa tecta; peritheciis depresso-globosis; ostiolo papillæformi; ascis amplis; sporidiis fuscis obovatis 2–3 septatis muco involutis. On dead branches of elm, at Clifton and elsewhere.

Scattered, scarcely visible externally. Perithecia immersed in the bark, depresso-globose, with a central papillæform ostiolum without any neck. Asci large, clavate, paraphyses flexuous; sporidia large, at first hyaline, consisting of two subconical articulations placed base to base; one of these gradually increases in diameter and becomes very obtuse; a septum is then formed at the base of the smaller articulation, and sometimes, though rarely, there is a third septum in the other cells. In every stage, except in extreme age when ejected, they have a gelatinous coat.

This is one of the finest species of the group, and distinguished from *S. inquinans* by the peculiar form of its sporidia, and more especially in the mode of their formation, for here and there an individual sporidium is observable which is equal at either extre-

mity. In germination, the lower articulation sends out a filament either laterally or from the extremity.

PLATE X. fig. 10. *a.* Ascus with paraphysis; *b.* sporidia in various stages of growth; *c.* ejected sporidia germinating. All more or less magnified.

628. *S.* (Obtectæ) *aucta,* n. s. Sparsa tecta; peritheciis globosis collapsis subtiliter tomentosis; collo obliquo deorsum constricto cum ostiolo breviter fusiformi; ascis amplis; sporidiis oblongo-ellipticis utrinque appendiculatis uni–3-septatis. On dead twigs of birch and alder, Spye Park, Wilts.

Scattered, scarcely visible externally except from the swelling of the bark above the perithecia. Perithecia globose, obscurely tomentose, soon collapsed; neck oblique, constricted below, confluent with the shortly spindle-shaped ostiolum. Asci broad, delicate; sporidia elliptic, with a truncate process at either extremity; at first uniseptate, with an endochrome of the same form as the cells; this eventually is divided into two nuclei, between which a new septum is formed, so that the sporidia have either one or three septa, in which latter case there is a constriction at each articulation.

PLATE X. fig. 11. *a.* Ascus; *b.* sporidia. More or less magnified.

629. *S.* (Obtectæ) *bufonia,* n. s. Sparsa; peritheciis globoso-depressiusculis, ostiolo brevi corticem perforante; ascis cylindricis; sporidiis uniserialibus oblongis uniseptatis muco involutis. On small dead branches of oak, Easton, Northamptonshire.

Scattered over the branches, which are rough with the little penetrating ostiola. Perithecia globose, slightly depressed; ostiolum central, papillæform, with scarcely any neck. Asci cylindrical, containing a single row of oblong uniseptate sporidia which have a thick gelatinous coat which ultimately vanishes. The strings of sporidia remind one somewhat of toad spawn.

PLATE X. fig. 13. *a.* Ascus; *b.* spores contained in inner membrane of ascus; *c.* spores which have lost their gelatinous coat. More or less magnified.

630. *S.* (Obtectæ) *dochmia,* n. s. Sparsa tecta; peritheciis solitariis ovatis obliquis demum collapsis; collo brevissimo constricto ostiolo explanato. On dead twigs of elm, Batheaston, Jan. 1851.

Scattered over the twigs, but visible externally, merely from the swellings caused by the perithecia. Perithecia somewhat ovate, oblique, collapsed when dry; neck extremely short and somewhat constricted; ostiolum broad, obtuse, perforated in the centre. Asci cylindrico-clavate, obtuse; sporidia oblong, very obtuse, slightly curved, at length uniseptate, hyaline, arranged in two rows.

Distinguished by marked characters both in the perithecia and sporidia from all allied species.

PLATE X. fig. 14. *a.* Perithecium; *b.* ascus; *c.* sporidia. More or less magnified.

631. *S.* (Obtectæ) *farcta,* n. s. Tecta dispersa; peritheciis solitariis globosis demum collapsis collo brevi, ostiolo obtuso demum epidermidem perforante; ascis clavatis obtusis sporidiis oblongis utrinque obtusiusculis 3–4 nucleatis repletis. On dead twigs of elm, Batheaston, Jan. 1851.

Scattered, scarcely conspicuous externally except from the slight projection over each perithecium, which is at length perforated by the obtuse ostiolum. Perithecia globose, collapsing when dry; neck short. Asci clavate, subcylindrical, obtuse, filled with numerous oblong linear sporidia, which are slightly obtuse at either end, and contain three or more globose nuclei.

This species resembles externally *S. hypodermia,* but the perithecia are solitary and the sporidia very different. The nearest ally perhaps is *S. Lebiseyi,* Desm., which is however much smaller, and has apiculate but otherwise similarly-shaped sporidia. In *Sphæria ditopa* as found on alder by Dr. Roussel, for Fries' specimen shows no fruit, the asci are stuffed, but the sporidia are larger and uniseptate. *Sph. ditopa,* Rab. no. 1038, is a very different species, with very elongated, curved, obtuse sporidia. It seems rather to belong to *Circinatæ,* and may be characterized—

S. Rabenhorstii, n. s. Peritheciis depressis ostiolis rectis; ascis amplis clavatis; sporidiis octonis elongatis utrinque obtusis majoribus curvulis.

PLATE X. fig. 15. *Sph. farcta*: *a.* Ascus; *b.* sporidia. More or less magnified. Fig. 15*. *S. ditopa*: *a.* Ascus; *b.* sporidia. Both magnified.

632. *S.* (Obtectæ) *trivialis,* n. s. Sparsa, tecta; peritheciis depressis minutis, ostiolo obsoleto; ascis amplis clavatis obtusis; sporidiis ellipticis uniseptatis. On dead twigs, Batheaston, Feb. 1851.

Scattered, covered by the cuticle, which appears brownish over each perithecium, but is really colourless. Perithecia depressed, elliptic; ostiolum obsolete; asci broad, clavate, containing eight broadly elliptic uniseptate sporidia.

Resembling somewhat as to the fruit ascigerous *Sphæria mutila,* but truly belonging to the section *Obtectæ.*

PLATE X. fig. 16. Ascus filled with sporidia. Magnified.

633. *Sphæria tomicum,* Lév. Ann. d. Sc. Nat. 1848.
Var. minor.
On *Aira cæspitosa,* Batheaston, Jan. 1850.

Our plant agrees with that of Léveillé in external appearance and in the spores, but differs simply in being far smaller, a circumstance probably attributable to its growing on the thin leaves of a grass instead of the juicy stems of a large *Juncus*.

We have also the same thing on dry withered stems of *Juncus conglomeratus* gathered at Draycott, Wilts, in which the sporidia are sometimes but not always more elongated, though essentially the same in colour and form.

We have placed the species here rather than in *Caulicolæ*, on account of its near relation to *S. clypeata*.

PLATE XI. fig. 17. *a*. Ascus; *b*. sporidia. More or less magnified.

634. *S.* (Obtectæ) *revelata*, n. s. Tecta, globosa, major, ostiolis brevibus papillæformibus sero expositis; ascis linearibus flexuosis; sporidiis uniserialibus oblongis biseptatis. On branches of lilac, Apethorpe, Jan. 1848.

At first completely concealed beneath the rough bark, and at length only manifest from the ostiola thrusting off little patches of the matrix, and then appearing solitary or scattered on white spots. Perithecia globose, large; ostiolum papillæform, distinct. Asci linear, flexuous; paraphyses long, slender; sporidia uniseriate, oblong, hyaline, biseptate, with very distinct endochromes.

We have a form of this species on twigs of elder gathered at Apethorpe, Nov. 1840, in which the ostiola are conical and much more developed, and the perithecia smaller. The asci and sporidia agree perfectly.

Another form occurs on *Chionanthus virginica*, and something very similar on lilac has been gathered by Dr. Léveillé at Romainville.

PLATE XI. fig. 18. *a*. Ascus and paraphysis; *b*. sporidia. More or less magnified.

635. *S.* (Obtectæ) *conformis*, n. s. Tecta sparsa; peritheciis nigris globosis demum collapsis ostiolo papillæformi; ascis subclavatis; sporidiis biserialibus oblongo-ellipticis utrinque obtusis biseptatis. On dead twigs of alder, mixed with *S. ditopa*.

Resembling closely *S. ditopa*, but differing in the small number of sporidia contained in each ascus, which are also broader and more obtuse, and exactly resembling those of *S. fuscella*.

PLATE XI. fig. 19. *a*. Ascus; *b*. sporidia in various stages of growth. All more or less magnified.

636. *S.* (Obtectæ) *fuscella*, n. s. Sparsa tecta; peritheciis fuscis depressis; ascis linearibus obtusis; sporidiis uniserialibus oblongo-ellipticis quandoque curvulis triseptatis. On dead twigs of rose, Easton, Norths., March 9, 1850.

Scattered, forming minute pustules; perithecia depressed, subglobose, brown. Asci linear, containing eight sporidia arranged in a single row; sporidia pale brown, oblong-elliptic, obtuse, triseptate, by no means constricted at the articulation, sometimes slightly curved.

Distinguished from *S. sepincola* by its minute brown perithecia and even elliptic obtuse sporidia. There is no sign of any ostiolum externally, nor have we ascertained the existence of any. *S. Corni,* Sow., which is usually referred to *S. sepincola,* has curved simple reproductive bodies apparently without asci. At least, such is the case with the specimens still remaining in Sowerby's Herbarium.

S. sepincola according to our notion of the species has slender, somewhat clavate asci and biseriate, oblong, subfusiform hyaline sporidia. Specimens may be found with slightly varying characters as to size and figure, but it is best to consider all which agree in essential respects as forms of one species. We therefore now refer the minute *Sphæria* found on dock-stems by Mr. Gardiner at Balmerino, formerly named *S. Gardineri,* to *S. sepincola* as a minute form on herbaceous stems.

Plate XI. fig. 20. *Sphæria fuscella*: *a.* Ascus; *b.* sporidia more or less magnified, but less so than in *S. conformis.* Fig. 21. *S. sepincola*: *a.* Ascus; *b.* sporidia: both magnified.

637. *S.* (Obtectæ) *persistens,* n. s. Sparsa ligno adnata demum cortice putrescente nuda subglobosa ostiolo parvo distincto; ascis clavatis, sporidiis biseriatis hyalinis fusiformibus centro constrictis curvulis sporidiolis quaternis. On dead shoots of rose, Bedford Purlieus, King's Cliffe, March 1850.

Scattered over the branches, and so immersed in the bark as not to form any pustules, exposed and persistent when the matrix is decayed, globose with a minute distinct ostiolum. Asci clavate, containing two rows of sporidia. Sporidia hyaline, fusiform, straight when seen from behind, slightly curved when seen laterally, constricted in the centre, each division containing two globose sporidiola. Well distinguished by its persistent nature and curious sporidia. We have not observed any septa.

Plate XI. fig. 22. *a.* Ascus and paraphysis; *b.* sporidia. All more or less magnified.

638. *S.* (Obtectæ) *futilis,* n. s. Sparsa epidermide nigrifacta tecta; peritheciis subglobosis; ascis linearibus; sporidiis uniseriatis brevibus oblongo-ellipticis uniseptatis. On dead rose-twigs, King's Cliffe, March 1850.

Minute, scattered, covered by the blackened cuticle so as to present little black specks. Asci linear; sporidia uniseriate,

short, oblong-elliptic, hyaline, sometimes slightly constricted in the centre, uniseptate. The septum appears to be continued through the external as well as the internal membrane.

The sporidia have much the form which is so common in the genus *Diplodia*. We can find no trace of the species in authors.

Plate XI. fig. 23. *a.* Asci and sporidia; *b.* sporidia more highly magnified.

639. *S.* (Subtectæ) *intermixta*, n. s. Minutissima sparsa epidermide tantum tecta nigra; peritheciis depressis supra convexis perforatis; ascis clavatis; sporidiis biseriatis hyalinis clavato-fusiformibus triseptatis. On rose-twigs mixed with *Sphæria fuscella*, but much smaller.

Scattered, seated beneath the cuticle. Perithecia very minute, convex, depressed, perforated in the centre, black. Asci clavate; sporidia biseriate, hyaline, clavato-fusiform, triseptate. One of many undescribed species comprised by authors under the name of *S. Epidermidis*. The asci are large for the size of the perithecia.

Plate XI. fig. 24. *a.* Asci; *b.* sporidia: both magnified.

**S. Epidermidis*, Fr. Scler. Suec. no. 19. In two copies of the 'Scleromycetes Suecicæ,' which we have the opportunity of examining, three things at least appear under this name, all marked no. 19:—1. A *Sphæria* on elder, which appears from its long sporidia to be a state of *S. sepincola*, or possibly of *S. Lebiseyi*; 2. another on elder, which we consider the type of the species with uniseptate sporidia, consisting of two apposed, rather irregular cones; and 3. a production on some Lonicera, which appears to be the same with a minute *Phoma*, common in this country on the same matrix. It appears in this case, as in *Sphæria sepincola*, the best course to consider species agreeing in structure, though differing somewhat in size, as mere forms of one type. We refer therefore to this species, one which we find on privet with very superficial, but rather thick and brittle perithecia, and sporidia twice as large and more constricted at the septum and in the centre of the two cones which compose them. It occurs on the same twigs with *Tympanis saligna*, which when young resembles closely a sub-cuticular *Sphæria* with a broad truncate ostiolum.

**S. Buxi*, Desm. Pl. Crypt. no. 1280. *S. atrovirens* b. Buxi, junior, Berk. Br. Fung. no. 180, pro parte.

Common on box leaves, on which several productions grow; comprised in Fries' 'Systema' under the name of *S. atrovirens*. In the present species the sporidia are short, oblongo-elliptic, hyaline, biseriate, slightly attenuated at either extremity.

**S. Rusci,* Wallr. Comp. Fl. Germ. p. 776. *S. atrovirens* δ. Rusci, Eng. Fl. vol. v. pt. 2. p. 272; Desm. 1281.

Common on leaves of *Ruscus aculeatus,* as at Wareham, from whence it has been sent by the Rev. W. Smith. Asci linear-clavate; sporidia biseriate, oblong, obtuse, 4–5-septate.

**S. derasa*=*S. calva,* Johnst. Fl. Berw. Perfect specimens of *S. calva,* Johnst.†, have lately been received from Mr. Bloxam. The asci are clavate; the sporidia biseriate, fusiformi-filiform, slightly curved, filled with a row of nuclei, at length faintly septate. One of the articulations is sometimes swollen. Specimens exactly agreeing with *S. comata,* Tode, have been sent from South Carolina by Mr. Ravenel, which have oblong multiseptate sporidia, with one or more vertical septa occasionally as in *S. herbarum*; we have therefore no hesitation in considering Dr. Johnston's plant as a distinct species.

Plate XI. fig. 25. *a.* Sporidia of *S. comata* from South Carolina; *b.* sporidia of *S. derasa.* Both highly magnified.

**S. acuminata,* Sow.! t. 394. f. 3=*S. Carduorum,* Wallr. Comp. Fl. Germ. vol. iv. p. 805; Desm. Ann. d. Sc. Nat. 2 sér. vol. xvii. p. 106. Common on dead thistle stems.

The spores in this species are linear, and contain at first numerous nuclei without articulations; at a later period of growth, however, the articulations are very manifest, aud we doubt not that *S. acuminata,* Sow.! is in truth the perfect form of Wallroth's species. In *S. coniformis,* the fructification of which is figured by Greville as that of *S. herbarum,* to which species therefore *S. acuminata* was referred in the 'English Flora' as agreeing to a certain extent in the sporidia, the number of joints is about half as great as in the present species. In *S. coniformis* there are about eleven joints, in *S. acuminata* about twenty. The sporidia, whether young or old, have a swelling near the apex, which is at the second articulation in the perfect sporidium.

Plate XI. fig. 26. *a.* Sporophores; *b.* spores *in situ.* Both magnified.

**S. Arundinis,* Fr. Syst. Myc. p. 510, var. *Tritici.* On wheat-straw, King's Cliffe, May 1, 1843.

Differing in no respect from the typical form, except in size.

† Dr. Johnston found also at Berwick, on *Senecio Jacobæa,* a fine species of *Phlyctæna,* which, as the genus is new to this country, we take this opportunity of characterizing:—

Phlyctæna Johnstoni, n. s. Maculis latioribus; pseudo-peritheciis brunneis; sporophoris flexuosis amplis, sporis elongatis curvis, medio nodulosis.

The spores are several times longer than in the original species, the sporophores highly developed, and towards the centre of the spores there is generally a distinct knot, and frequently the outline is more or less irregular.

In both the spores are at first uniseptate, and the contents of the two portions are then divided into two or three endochromes, in which respect there is an essential difference between this species and all forms of *S. culmifraga*.

[To be continued.]

XXVIII.—*Rambles in Ceylon.* By E. L. Layard.

Mulletivoe, April 7, 1851.

My Dear Sir,—I promised to keep you informed of my wanderings between Jaffna and Kandy; so here you have the first instalment. Knowing your taste for my favourite pursuit, I have thrown in a few notes thereon, the results of observations made at various times, which have recurred to me, as the discovery of a new species, or a new trait of character in an old one, have brought them to my remembrance.

I left Jaffna in the royal mail on the 31st March, having sent off my baggage in a bullock bandy, to the back of which was attached a light gig, in which I proposed to drive down the great central road to Kandy, a distance of 184 miles through the jungle, and a feat hitherto unaccomplished since the road was opened.

Many were the prophecies of my failure. Mr. B., our civil engineer, left me in the lurch on the banks of the Pie or Sitt-aars, two rivers which I should have to cross. Mr. D., whose brother-in-law was to accompany me, broke me down between Damboul and Nalandy, at a rocky part of the road. Mr. D., our government agent, stuck me up to the middle in mud between Nalandy and Matelle. One person only encouraged me,—that was Mr. Q., who had surveyed and cut the road and was going with me to Mulletivoe. But to return: I started at 2 P.M. in the mail for Karandi, Mr. D.'s cocoa-nut estate; and oh! what a royal mail! The smart English vehicle of that name and its four dashing horses was represented by an old palanquin carriage (which you must know is like a palqui stuck on wheels, having a well cut in the bottom to contain one's feet), and a sorry broken-winded, broken-kneed horse. The substitute for a coachman consisted in a nigger in undress, that is, with a thin slip of cloth drawn between his legs, and fastened before and behind to a string tied round his loins, who tugged at the horse's mouth; while the mail-guard or conductor sat inside with me, the letters being deposited in his coat-pockets; a gridiron and tea-kettle belonging to myself, swinging in front, complete the picture of the "royal mail." After being relieved every five miles by a fresh horse, *worse* if possible than the former, we reached our destination,—a cadjan shed at the end of the macadamized road, and the beginning of the European estates. Here I found a horse awaiting me, and after a dark and tiresome ride of eight miles through sand up to the horse's fetlocks, my nag came to halt at a gate. Concluding this to be the estate, I turned in, and was soon welcomed by D., his wife, and her brother Mr. B. of the Madras service. After discussing our plans over the dinner-table,